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THREE NEW SPECIES OF *CONOSTEGIA*
(MELASTOMATACEAE: MICONIEAE) FROM
SOUTHERN CENTRAL AMERICA

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ABSTRACT: Three new species of *Conostegia*, a well-defined berry-fruited genus of Melastomataceae with a center of diversity in Costa Rica and Panama, have been collected in little-explored regions of southern Costa Rica and western Panama during the past decade. Descriptions, discussions, diagnostic illustrations, phenological notes, and a distribution map are provided for *Conostegia fragrantissima*, *C. muriculata*, and *C. orbeliana*. Attention is drawn to the need for recording field data on taxonomically useful floral and fruit characters.

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INTRODUCTION

Conostegia, a neotropical genus of about 50 species is one of approximately 30 berry-fruited genera assigned to the New World tribe Miconieae. Unlike some genera in this large tribe of 1,800-1,900 species, *Conostegia* is a natural assemblage readily defined by its terminal inflorescence, calyptriform calyx that is circumscissile at or near the torus, and isomorphic stamens with lorate anthers and unappendaged connectives. *Conostegia* is also noteworthy among neotropical Melastomataceae because most (but not all) of its species have flowers that are anisomerous and typically pleiostemonous. Among other genera in the Miconieae only a few species of *Clidemia* and *Miconia* have flowers with unequal numbers or proportions of serially homologous structures.

Variation in several species of *Conostegia* remains imperfectly understood because of inadequate geographic sampling and fragmentary preservation of floral characters on herbarium

specimens. Petal and stamen numbers, the posture and orientation of the style, stigma morphology, and ovary cell number provide useful information for the delimitation of species in *Conostegia*. These characters are often difficult to evaluate after specimens have been pressed and dried. Ideally, notes on these features should be recorded in the field when the preservation of flowers and fruits in a liquid medium is not feasible.

The three species described below all come from rich, but little-known, areas of Costa Rica and Panama. Over 33 species of *Conostegia* occur in this small isthmian region, making it the center of diversity for the genus and a promising area for continued botanical exploration in the Mesoamerican region.

Conostegia fragrantissima Almeda, sp. nov.

Fig. 1

TYPE.—PANAMA. Bocas del Toro. Fortuna Dam area, along continental divide trail bordering Chiriquí Province at 8°45'04"N, 82°15'04"W, 1,200-1,300 m, 10 Mar. 1988, Al-



FIGURE 1. *Conostegia fragrantissima* Almeda. A, habit, \times ca. $\frac{1}{2}$; B, representative leaf (abaxial surface), \times 1; C, flower bud when fresh, \times ca. 4; D, young berry with detached calyptiform calyx, \times 5; E, flower bud when dry, \times ca. 4; F, representative flower showing reflexed petals, declinate style and stigma enlargement (right), \times ca. 3; G, petal (adaxial surface), \times ca. 5; H, stamens, ventral view (left) and lateral view (right), \times ca. 8; I, seeds, \times ca. 30. (A-I from the holotype.)

meda et al. 6064 (holotype: CAS!; isotypes: AAU!, BM!, BR!, CR!, DUKE!, F!, MEXU!, MO!, NY!, PMA!, TEX!, US!).

Arbor 4-11 m. Ramuli primum quadrangulati demum teretes glabri; linea interpetiolaris paulo elevata evoluta. Petioli

1-2.6 cm longi; lamina 4.5-9.5 \times 1.5-4.2 cm elliptica vel elliptico-lanceolata apice acuminata vel caudato-acuminata basi acuta, 3(-5)-plinervata, membranacea et integra supra glabra, subtus sparsiuscule caduceque lepidota. Inflorescentia 4-7.5 cm longa multiflora; pedicellis (ad anthesim) 2.5-7 mm longi;

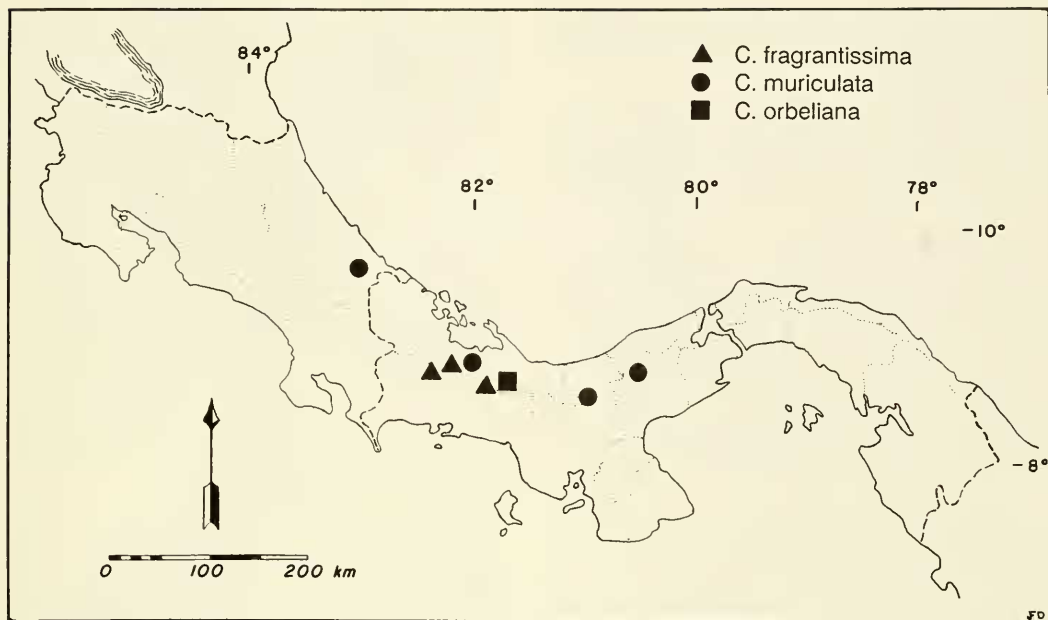


FIGURE 2. Distributions of *Conostegia fragrantissima*, *C. muriculata*, and *C. orbélia*.

bracteolis 0.25–1.5 mm longis mox caducis. Alabastra matura acuminata vel apiculata 5–7 × 2–3 mm; calyx calyptriformis 3–4.5 mm longus. Petala 6–7, glabra 5–7 × 3.5–4.5 mm, obovata apice irregulariter rotundato. Stamina 15–19, isomorphica glabra; filamenta 2–2.5 mm longa; antherarum thecae 1.5–2 × 0.5 mm oblongae, poro ventraliter inclinato; connectivum nec prolongatum nec appendiculatum. Stylus 5–5.5 mm glaber; stigma capitatum 1.5 mm diam.; ovarium 6-loculare et omnino inferum apice glabro (cono et collo non evoluto).

Trees 4–11 m tall. The distal branchlets glabrous and bluntly quadrate with darkened interpetiolar lines or ridges. Leaves of a pair equal to somewhat unequal in size; petioles 1–2.6 cm long; blades membranaceous, 4.5–9.5 cm long and 1.5–4.2 cm wide, elliptic to elliptic-lanceolate, apex acuminate to caudate-acuminate, base acute, margin entire, 3(–5)-plinerved, the innermost pair of elevated primaries diverging from the median nerve in opposite fashion (1–)3–5 mm above the blade base, glabrous above, sparsely and deciduously furfuraceous-lepidote below. Inflorescence a terminal paniculiform dichasium 4–7.5 cm long typically branching above the node initiating the inflorescence, the rachis inconspicuously and deciduously furfuraceous-lepidote; bracteoles sessile to subsessile, early deciduous, narrowly triangular to subulate or linear-oblong, 0.25–1.5 mm long, 0.25 mm wide, glabrous, margin entire. Pedicels 2.5–7 mm long, decidu-

ously furfuraceous-lepidote. Flower buds oblong-ellipsoid, becoming horizontally constricted at the torus and truncate at the base when dry, 5–7 mm long, 2–3 mm wide, smooth and glabrous or sparsely furfuraceous-lepidote, the calyptriform calyx 3–4.5 mm long, acuminate to apiculate; torus glabrous adaxially. Petals 6–7, glabrous, white with a horizontal red band near the base, obovate, reflexed, irregularly lobed apically, 5–7 mm long and 3.5–4.5 mm wide distally. Stamens 15–19, gently declined to one side of the flower opposing the style; filaments glabrous, complanate, 2–2.5 mm long; anthers 1.5–2 mm long, 0.5 mm wide, orange, linear-oblong, truncate to broadly rounded at the apex with a somewhat ventrally inclined terminal pore 0.25 mm in diam.; connective thickened dorsally but not prolonged or appendaged at the filament insertion. Ovary (at anthesis) completely inferior, 6-celled, ovoid, the apex glabrous, smooth and lacking an elevated cone or collar. Style declinate, glabrous, 5–5.5 mm long; stigma capitate, 1.5 mm in diam. with 6–7 papillose lobes. Berry depressed-globose, 3 mm long and 4 mm in diam. Seeds oblong, oblong-ovoid, or narrowly pyramidal, 0.5–0.75 mm long, beige, smooth and polished on the convex face.

PHENOLOGY.—Flowering specimens have been

collected in the months of February through May; fruiting specimens have been collected in February and April.

DISTRIBUTION.—Local in wet evergreen and elfin forests of western Panama from Cerro Pate Macho (Chiriquí) to the Cerro Colorado region (Bocas del Toro) at 1,200–2,000 m (Fig. 2).

ADDITIONAL SPECIMENS EXAMINED.—PANAMA. Bocas del Toro: Fortuna Dam area, along continental divide trail, 8°45'04"N, 82°15'04"W, 10 Mar. 1988, *Almeda et al. 6068* (CAS); Fortuna Dam region near trail along continental divide, 8°45'N, 82°15'W, 11 Feb. 1986, *McPherson 8406* (CAS); vicinity of Cerro Colorado on trail along creek 8.6 miles from Camp Chamí, 8°35'N, 81°45'W, 14 Apr. 1986, *McPherson 8900* (CAS); vicinity of Cerro Colorado mine above San Felix, 8°35'N, 8°50'W, 26 Jan. 1988, *McPherson 12024* (CAS). Chiriquí: SE slopes and summit of Cerro Pate Macho, 4 km NE of Boquete, 26 May 1981, *Sytsma et al. 4884* (CAS).

This species is distinguished by a combination of indument and floral characters. The lower leaf surfaces, branchlets of the inflorescence, pedicels, and distal cauline internodes are sparsely beset with deciduous furfuraceous-lepidote hairs. Although many specimens superficially appear glabrous to the unaided eye, the inconspicuous indument is readily detected on one or all of the above-mentioned structures when examined with a dissecting microscope. Aside from the declinate style and lobulate depressed-capitate stigma, most of the distinctive floral features are not readily gleaned from herbarium specimens without good field notes. The flowers are fragrant, the anthers are bright orange in color, and each conspicuously reflexed white petal has a red horizontal band near the base. This distinctive petal coloration is, to my knowledge, otherwise unknown in *Conostegia*.

The closest relative of *C. fragrantissima* is probably *C. pittieri* Cogn., a species known only from Costa Rica and Nicaragua. They both have elliptic to elliptic-lanceolate, caudate-acuminate, plinerved leaves and flowers with similar petal and stamen numbers. *Conostegia pittieri* is glabrous throughout, and its leaves are prevalingly undulate-denticulate. It also differs from *C. fragrantissima* in having longer floral buds (9–13 mm), larger petals (9–13 × 5–8 mm), more ovary cells (8–10), and a crateriform capitate stigma.

In Gleason's treatment of *Conostegia* for the Flora of Panama (Gleason 1958), *C. fragrantissima* keys closest to *C. montana* (Sw.) D. Don ex DC., a widespread species ranging from southern Mexico (Chiapas) and the West Indies (How-

ard 1989) south through Central America to Colombia, Venezuela, and Ecuador. *Conostegia fragrantissima* shares many features with *C. montana* including foliar shape, petal and stamen numbers, and the number of ovary cells, but the latter has stellate hairs on the inflorescence rachis, pedicels, and elevated primary veins on lower leaf surfaces. In addition, the flowers of *C. montana* produce no detectable odor, the pedicels are shorter (1 mm), the petals are completely white, the anthers are pale yellow, and the style (when dry) is abruptly expanded just below the subtruncate unlobed stigma. The style and stigma enlargement of *C. fragrantissima* (Fig. 1F) was drawn from liquid-preserved flowers. Upon drying, the style retains its linear outline, but the capitate stigma becomes gently fluted and bluntly obconic in profile view.

The fragrant flowers of *C. fragrantissima* are unusual but not unique among its congeners. The flowers of *C. pittieri* are also fragrant (fide *Luner 1148*, CAS), but information of this kind is rarely reported on herbarium labels. In choosing the epithet for this species, which is derived from *frago*, Latin for sweet smelling, I draw attention to the very fruity fragrance of the fresh flowers.

Conostegia muriculata Almeda, sp. nov.

(Fig. 3)

TYPE.—PANAMA. Bocas del Toro: Above Chiriquí Grande, 10 road-miles from the continental divide and 2 miles along road to the east, 8°55'N, 82°10'W, 300 m, 6 Aug. 1988, *McPherson 12836* (holotype: CAS!; isotypes: CR!, DUKE!, MO!, PMA!, US!).

Frutex vel arbor parva 2.5–3.5 m. Ramuli primum acute quadrangulati demum teretes glabri; linea interpetiolaris obscure evoluta. Petioli 1.5–7 cm longi; lamina 8–25.5 × 4.5–14 cm elliptica vel obovato-elliptica apice acuminata basi acuta, 5-nervata vel 5–7-plinervata, membranacea et integra, supra glabra, subtus sparsiuscule caduceque lepidota. Inflorescentia 12–30 cm longa (pedunculo 4–10 cm longo incluso) laxa multiflora; pedicellis (ad anthesim) 0.5–3 mm longis; bracteis 0.5–1 mm longis mox caducis. Alabastra matura acuminata 6–10 × 3.5–4.5 mm; calyx calyptriformis 3–5 mm longus. Petala 5, glabra, 5–6 × 4–5(–6.5) mm, obovata apice rotundato. Stamina (8)–9–10, isomorphica glabra; filamenta 2.5–3 mm longa; antherarum thecae 2–3 × 0.75 mm oblongae, poro ventraliter inclinato; connectivum nec prolongatum nec appendiculatum. Stylus 3–4 mm glaber; stigma capitatum 0.75 mm diam.; ovarium 6-loculare et omnino inferum apice glabro (cono et collo non evoluto).

Shrubs or small trees 2.5–3.5 m tall. The distal branchlets glabrous with interpetiolar lines, quadrate and carinate on the angles but becom-

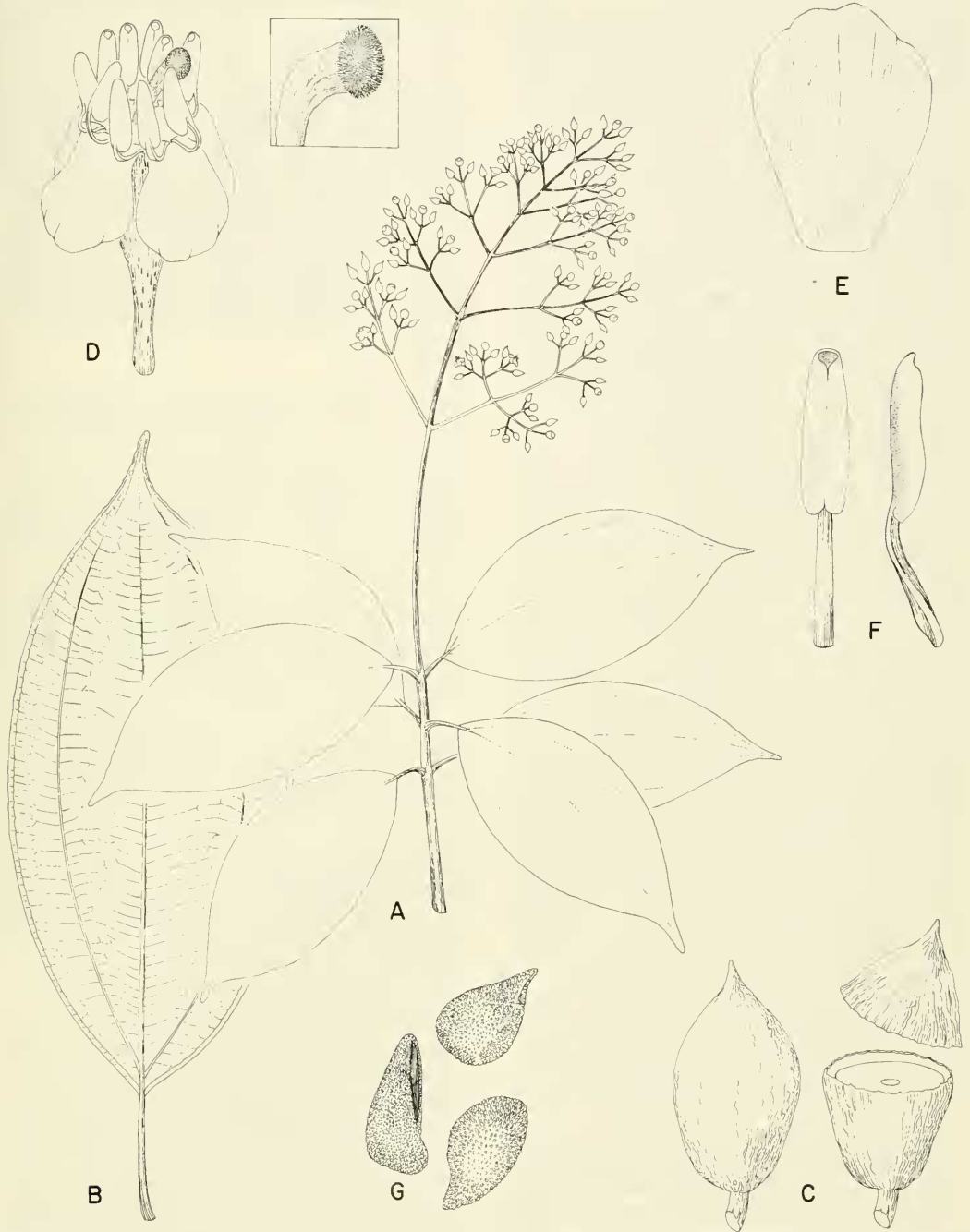


FIGURE 3. *Conostegia muriculata* Almeda. A, habit, \times ca. $\frac{1}{4}$; B, representative leaf (abaxial surface), \times $\frac{1}{2}$; C, flower bud (left) and bud with detached calyptriform calyx and floral parts removed (right), \times 4; D, representative flower showing spreading petals, arching style, and stigma enlargement (right), \times 5; E, petal (adaxial surface), \times 6; F, stamens, ventral view (left) and lateral view (right), \times 7; G, seeds, \times 26. (A–F from the holotype; G from Almeda *et al.* 6328.)

ing rounded-quadrate with age. Leaves of a pair equal or unequal in size (if unequal then the smaller one $\frac{2}{3}$ to $\frac{3}{5}$ the size of the larger one); petioles 1.5–7 cm long, sparsely to moderately lepidote when young; blades membranaceous, 8–25.4 cm long and 4.5–14 cm wide, elliptic to elliptic-obovate, apex acuminate, base acute, margin entire, 5-nerved or inconspicuously 5–7-plinerved with a prominulous network of secondary and higher order veins, glabrous above, sparsely and deciduously lepidote below. Inflorescence a terminal paniculiform dichasium 12–30 cm long on a well-defined arching or deflexed peduncle mostly 3.5–10 cm long, the rachis glabrous; bracteoles sessile, early deciduous, narrowly triangular to subulate, 0.5–1 mm long, 0.25–0.5 mm wide, sparingly lepidote to glabrate abaxially, margin entire. Pedicels 0.5–3 mm long, sparsely to moderately lepidote. Flower buds oblong-ellipsoid, 6–10 mm long 3.5–4.5 mm wide, sparsely to moderately lepidote basally, the calyptriform calyx 3–5 mm long, acuminate; torus glabrous adaxially and callose thickened along the adjacent circumscissile line. Petals 5, glabrous, obovate, reflexed to widely spreading, gently lobed to somewhat oblique apically, 5–6 mm long, 4–5(–6.5) mm wide distally. Stamens (8–)9–10; filaments glabrous, complanate, 2.5–3 mm long; anthers 2–3 mm long, 0.75 mm wide, pale yellow, linear-oblong with a ventrally inclined terminal pore 0.25 mm in diam.; connective thickened dorsally but not prolonged or appendaged at the filament insertion. Ovary (at anthesis) completely inferior, 6-celled, ovoid, the apex glabrous, smooth, and lacking an elevated cone or collar. Style conspicuously curved distally, glabrous, 3–4 mm long; stigma capitate, 0.75 mm in diameter, copiously papillose but lacking well-defined lobes. Berry purple at maturity, depressed-ovoid, 5–6 mm long and 5–7 mm in diameter. Seeds narrowly pyriform, 0.75 mm long, yellowish-white, irregularly muriculate on the convex face.

PHENOLOGY.—Flowering specimens have been collected in April, July, August, and September; specimens in young fruit have been collected in September, but mature fruiting collections have been made only in January.

DISTRIBUTION.—A local and uncommon understory tree of wet evergreen forests from southeastern Costa Rica (Limón) southeast to the Caribbean slopes of Panama, from Bocas del Toro province to Cerro Tute (Veraguas) and the region

north of El Copé (Coclé) from 90–1,200 m (Fig. 2).

ADDITIONAL SPECIMENS EXAMINED.—COSTA RICA. Limón: Hitoy Cerere Biological Reserve, SW of Valle La Estrella along Río Cerere to ca. 1 km upstream from Quebrada Barrera, 9°40'30"N, 83°02'W, 31 Jul. 1985, *Grayum & Hammel 5773* (CAS). PANAMA. Bocas del Toro: above Chiriquí Grande on a side road ca. 10 miles below the continental divide ca. 2½ miles E on that road, 8°55'N, 82°10'W, 19 Jan. 1989, *Almeda et al. 6328* (CAS, CR, MO, NY, PMA). Coclé: New Works, 7 km N of El Copé, 18 Aug. 1977, *Folsom 4938* (CAS, PMA); forest on continental divide above El Copé, 8°38'N, 80°38'W, 27–29 Apr. 1985, *Hammel 13663* (CAS). Veraguas: Cerro Tute, trail past agricultural school near Santa Fe, 17 Sep. 1979, *Antonio 1840* (CAS).

Specimens of *C. muriculata* were first collected in 1977 but the distinctiveness of this species became evident only after study of the flowering collection designated here as the type. The distinguishing features of *C. muriculata* are its quadrate carinate distal branchlets; sparingly lepidote indument on lower leaf surfaces, pedicels, and flower buds; distinctly pedunculate paniculiform dichasia; and muriculate seed coat. Collectors have described the petals of this species as deep blue (*Folsom 4938*), pale blue-violet (*Grayum & Hammel 5773*), lavender (*McPherson 12836*), and purple (*Antonio 1840*, *Hammel 13663*). All of these collectors, except Folsom and McPherson, have also noted that the inflorescence is pendant or deflexed. Because these characters are unusual in *Conostegia* and potentially diagnostic, additional field study is needed to determine whether they are consistent.

The close relatives of *C. muriculata* among described congeners are not readily apparent. It superficially resembles *C. tenuifolia* J. D. Smith and *C. rhodopetala* J. D. Smith. The former, described from Costa Rica (Smith 1899) but now also known from Nicaragua and Panama, differs in having narrower leaves (3.6–7.4 cm) with abruptly caudate-acuminate apices, ovoid buds that are conspicuously subtruncate at the base (when dry), 16–22 stamens per flower, an ovary with 10–12 locules, and seeds with a smooth testa. In having oblong-ellipsoid acuminate flower buds and a 6-celled ovary, *C. muriculata* is also similar to the Costa Rican endemic *C. rhodopetala*. In the field, *C. rhodopetala* is readily distinguished from other species of *Conostegia* by the bright pink coloration of inflorescence branches, flower buds, and petals. The most notable characters separating it from *C. muriculata*

include its sparse and deciduously stellulate-furfuraceous indument on the inflorescence rachis, longer petals (8–10 mm), larger number of stamens per flower (12–17), and smooth seeds.

The name for this species is the diminutive of *muricatus*, Latin for short and tubercular excrescences. It emphasizes the finely sculptured seeds. The seeds of *C. polyandra* Benth. are depicted as muriculate in the plate included with the protologue (Benth 1844). However, an examination of several recent collections of *C. polyandra* from throughout its range reveals that its seeds are completely smooth.

***Conostegia orbéliana* Almeda, sp. nov.**

(Fig. 4)

TYPE.—PANAMA. Bocas del Toro: vicinity of Cerro Colorado mine above San Felix, along trails N of road along continental divide, 8°35'N, 81°50'W, 1,500 m 26 Jan. 1988, *McPherson 12014* (holotype: CAS!; isotypes: CR!, DUKE!, MEXU!, MO!, PMA!, TEX!, US!).

Arbor 6–7 m. Ramuli quadrangulati demum teretes sicut foliorum subtus venae primariae inflorescentia hypanthiaque dense pilis stellatis et pilis stipitato-stellatis induti. Petioli 1.2–3 cm longi; lamina 5–11.2 × 3–5.5 cm elliptica vel elliptico-ovata, apice acuminata vel cuspidata, basi acuta, 3–5-plinervata, membranacea et obscure serrulata vel subintegra. Inflorescentia 4–7(–10) cm longa laxa pauciflora; pedicellis (ad anthesim) 8–20 mm longis; bracteolis 1–2 mm longis mox caducis. Alabastra matura acuta vel acuminata 12–15 × 9–11 mm; calyx calyptriiformis 6–8 mm longus. Petala 8, glabra, 11–15 × 9–13 mm, obovata apice rotundato vel rotundato-subtruncato. Stamina 19–22, isomorphica glabra; filamenta 5–5.5 mm longa; antherarum thecae 3–3.5 × 0.75 mm oblongae, poro dorsalter inclinato; connectivum nec prolongatum nec appendiculatum. Stylus 7 mm glaber, stigmatum subpeltato centro concavo costato; ovarium 12–13-loculare et omnino inferum, collo 2 mm alto glabro paulo costulato.

Trees 6–7 m tall. Uppermost internodes quadrate becoming rounded with age, moderately to copiously covered with a mixture of sessile-stellate and short stipitate-stellate hairs. Leaves of a pair equal to somewhat unequal in size; petioles 1.2–3 cm long; blades membranaceous, 5–11.2 cm long and 3–5.5 cm wide, elliptic to elliptico-ovate, apex acuminate to cuspidate, base acute, margin inconspicuously serrulate to subentire, 3–5-plinerved, the innermost pair of elevated primaries diverging from the median nerve in opposite or subalternate fashion 5–9 mm above the blade base, glabrous above at maturity, moderately covered with a mixture of sessile-stellate and short stalked-stellate hairs on the elevated primary and secondary veins below. Inflores-

cence a terminal paniculiform dichasium 4–7 (–10) cm long, the rachis copiously beset with sessile stellate and short stalked stellate hairs; bracteoles sessile, early deciduous, subulate to linear-oblong, 1–2 mm long, 0.25–0.5 mm wide with pubescence like that of the rachis on the abaxial surface, margin entire. Pedicels 8–20 mm long, copiously beset with sessile-stellate and short, stalked, stellate hairs. Flower buds ellipsoid, 12–15 mm long, 9–11 mm wide, coarsely verrucose for the basal half of their length and moderately covered with tardily deciduous stellate hairs throughout, the calyptriiform calyx 6–8 mm long, acute to acuminate; torus glabrous adaxially. Petals 8, glabrous, connivent, white, obovate, widely spreading, apically rounded to subtruncate with irregularly lobed undulate margins, 11–15 mm long, 9–13 mm wide distally. Stamens 19–22, typically positioned in a ring around the style; filaments glabrous, complanate, 5–5.5 mm long; anthers 3–3.5 mm long, 0.75 mm wide, yellow, linear-oblong, truncate to broadly rounded at the apex with a somewhat dorsally inclined terminal pore 0.25 mm in diameter; anther connective thickened dorsally but not prolonged or appendaged at the filament insertion. Ovary (at anthesis) completely inferior, 12–13-celled, depressed-globose, the apex glabrous, gently fluted or costulate with an elevated stylar collar 2 mm long. Style straight, glabrous 7 mm long; stigma flared, subpeltate and crateriform with 12–13 longitudinal riblike lobes. Mature berry and seeds not seen.

PHENOLOGY.—The two known collections, both of which are in flower, were made in January.

DISTRIBUTION.—A local and uncommon element of cloud forest vegetation on slopes and valleys in the vicinity of Cerro Colorado mine above San Felix in western Panama at 1,450–1,500 m (Fig. 2).

ADDITIONAL SPECIMENS EXAMINED.—PANAMA. Bocas del Toro/Chiriquí Border: slopes and valleys of Cerro Colorado region, 27 Jan. 1989, *Almeda et al. 6445* (CAS, MO, NY, PMA).

Judging from the few specimens collected, this species, which was first gathered in 1988, is apparently rare and localized. *Conostegia orbéliana* has a combination of features that readily set it apart from its congeners. The uppermost cauline internodes, pedicels, and inflorescence rachis are mostly densely beset with a mixture of sessile

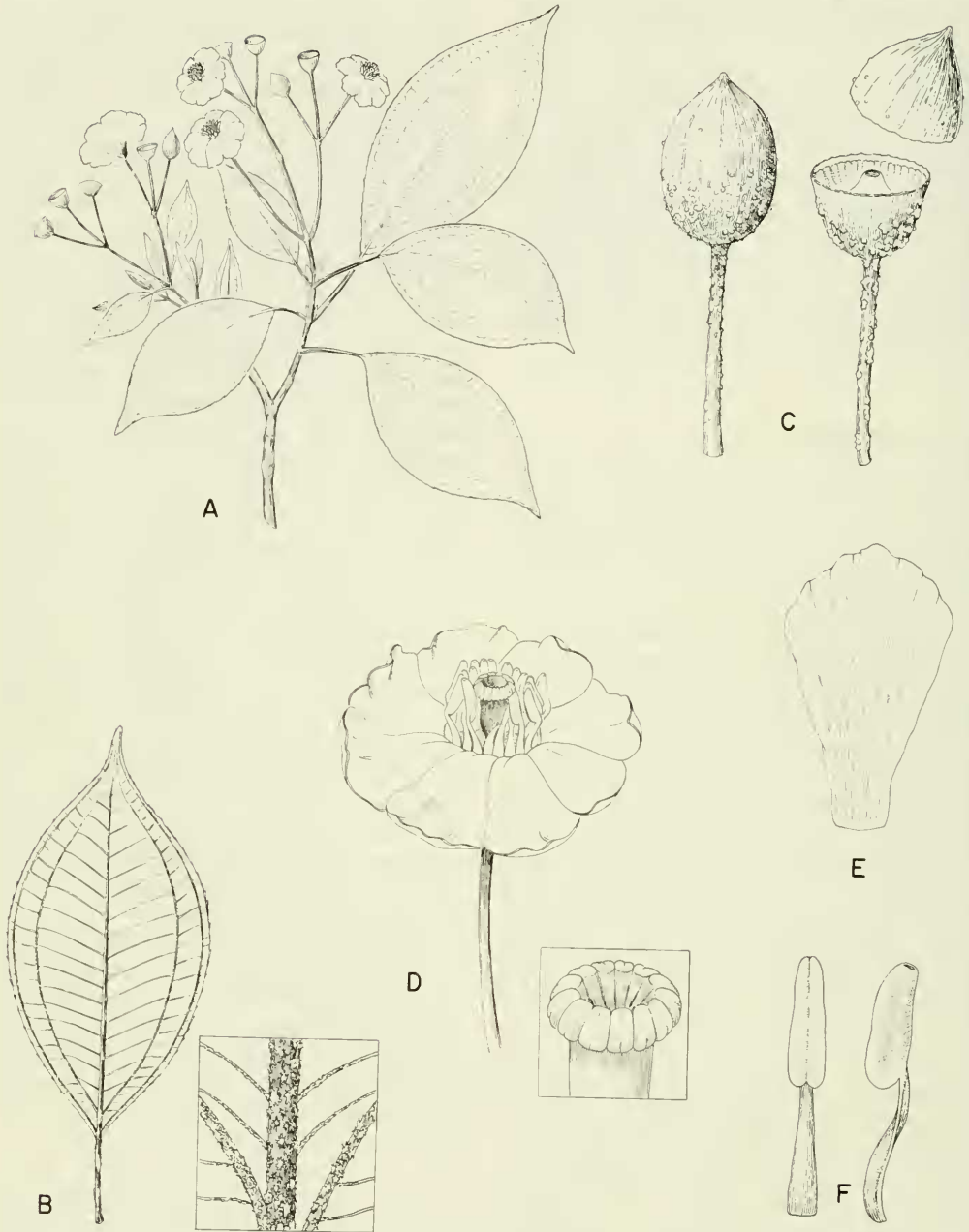


FIGURE 4. *Conostegia orbiliana* Almeda. A, habit, \times ca. $\frac{1}{2}$, B, representative leaf (abaxial surface) with enlargement (right), \times ca. $\frac{2}{3}$; C, flower bud (left) and bud with detached calytriform calyx and floral parts removed (right), \times ca. $1\frac{1}{2}$; D, representative flower showing spreading petals, straight style, and stigma enlargement (right), \times ca. $\frac{1}{5}$; E, petals (adaxial surface), \times 3; F, stamens, ventral view (left) and lateral view (right), \times 6. (A–C from the holotype; D–F from Almeda et al. 6445.)

stellate and short-stalked stellate hairs. Its inconspicuously serrulate to subentire leaves are unusually small for a species with comparatively large flowers that measure ca. 3 cm in diameter.

Other notable features of *C. orbiliana* are the coarsely verrucose hypanthial cups (Fig. 4C) and the dorsally inclined anther pore (Fig. 4F).

Overlapping similarities in foliar pubescence,

petal and stamen numbers, style posture, stigma morphology, and the number of ovary cells suggest that *C. orbeliana* is closely related to *C. volcanalis* Standley & Steyerl. of southern Mexico (Chiapas, Guerrero, Jalisco), Guatemala, Honduras, and Nicaragua. I define *C. volcanalis* in a broad sense, perhaps too broadly, to accommodate what I interpret as regional variation in leaf and petal size, bud shape, and foliar pubescence density. Some populations, for example, have leaves that are nearly glabrous below. Others have lower leaf surfaces beset with a mixture of sessile stellate and long-stalked stellate hairs, whereas others have only long-stalked stellate hairs mostly confined to the elevated primary and secondary veins. Even in its broadest circumscription, *C. volcanalis* is readily separated from *C. orbeliana* by its larger (12–27 × 6–15 cm) mostly undulate-dentate leaves, longer petioles (3.5–6.7 cm), smaller floral buds (8–10 mm), and completely smooth pedicels and hypanthial cups.

This species is named for Orbelia R. Robinson, friend and fellow student of the Melastomataceae, in grateful recognition of all the volunteer technical and research assistance she has rendered in the herbarium of the California Academy of Sciences during the past decade.

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RESUMEN

Conostegia es un género natural de amplia distribución pero con gran concentración en Costa Rica y Panamá, 33 de sus 50 especies ocurren allí. La relativa inaccesibilidad a ciertas áreas tales como las selvas de la parte sur de Costa Rica (Limón) y de las provincias de Bocas del Toro y Chiriquí en Panamá, se reflejan en el número de especies recolectados hasta el presente. El número de los pétalos y estambres, la posición del estilo, la forma y tamaño del estigma, y el número de lóculos en el ovario son a menudo caracteres taxonómicos muy útiles en *Conostegia*. Se proveen descripciones, ilustraciones y discusiones referentes a las afinidades de tres especies nuevas: *Conostegia fragrantissima* y *C. orbeliana* de Panamá y *C. muriculata* de Costa Rica y Panamá. También se presenta un mapa de distribución para todas ellas.

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